MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2016/2017

TWT2231 – WEB TECHNIQUES AND APPLICATIONS

(All sections / Groups)

8 MARCH 2017
9:00AM – 11:00AM
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of 6 pages (including cover page) with **FIVE** questions only.

2. Attempt all **FIVE** questions.

3. All questions carry equal marks and the distribution of the marks for each question is given.

4. Please print all your answers in the Answer Booklet provided.

Question 1

(a) With the rise of social networks, more and more private information is transmitted via websites without any security layer. How to make the private information such as credit card number to be transmitted using a secure connection in a certain website? Explain in details the approach that is used to secure the communications and identification information over the web.

[4 marks]

(b) You are given an image named as "mmu.jpeg". This picture is resized to width=150 and height=200. The text of "Multimedia University" is displayed when the image is not able to be rendered. Write the HTML code that only reflects the requirement mentioned above.

[2 marks]

(c) Write the HTML5 code to create a table that consists of student information (together with hyperlink) using the information below:

Description	Hyperlink
Faculty of Information Science and Technology	fist.mmu.edu.my
Faculty of Engineering and Technology	fet.mmu.edu.my

The heading of "Student Information" is in level 2 header. The output is shown below:

Student Information

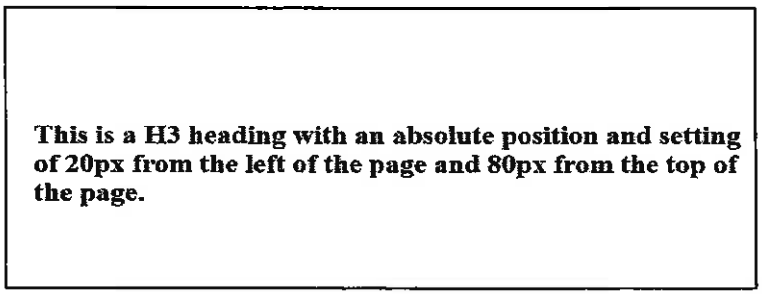
Name	Faculty
Steven Gan	Faculty of Information Science and Technology
Mary Lee	Faculty of Engineering and Technology

[4 marks]

Continued ...

Question 2

(a) Write the HTML code together with the embedded style CSS to display the result as shown below. Follow the setting of the CSS as described below to create the HTML page.


This is a H3 heading with an absolute position and setting of 20px from the left of the page and 80px from the top of the page.

[3 marks]

(b) Events are the actions that occur as a result of browser activities or user interactions with the web pages. JavaScript's interaction with HTML is handled through the occurred event. Discuss the addEventListener method and removeEventListener method in handling the event in JavaScript.

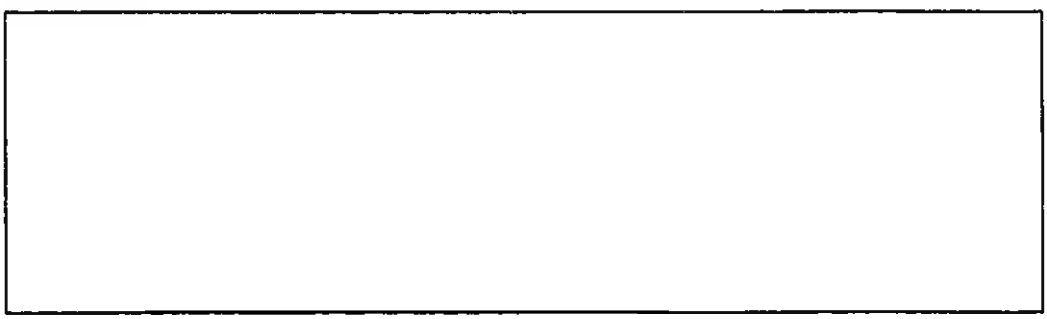
[3 marks]

(c) The code below calculates the multiplication of two numbers using JavaScript. When the JavaScript function is called after the page is loaded, the result of multiplication is shown in the browser. You are required to finish the incomplete code in JavaScript function below.

[4 marks]

```
<!DOCTYPE html>
<html>
  <head>

    <!-- fill in the code below -->
```



```
  </head>
  <body>
     The answer of 4 x 3= <script>multiply(4,3);</script>
   </body>
</html>
```

Continued ...

Question 3

(a) Given the following table in a MySQL database:

Table name: Student

ID	Name	State	Major
1001	Steven Teh	Melaka	ST
1002	Ali Abdullah	Johor	ST
1005	Bruce Koh	Johor	ITM
1008	Mary Lee	Kelantan	DCN
1205	Siti Aminah	Melaka	ITM
1206	Muthu Samy	Melaka	ST

i) Write an SQL command to retrieve the id and name of student who lives in Melaka. Sort the result based on the name.

[1.5 marks]

ii) Ali Abdullah changes his major from ST to DCN. Update the Student table to reflect the change in the school.

[1.5 marks]

(b) Given a MySQL server hosted at **192.168.1.101** with username, **WebTech** and password, **TWT2231**. Write the PHP code that retrieves every record of the table, **students** from database, **faculty**. Store the retrieval results in the variable **$results**.

[4 marks]

(c) Given the following PHP associative array:

$subject["TWT2231"] = "Web Techniques and Applications";
$subject["TOP2121"] = "Object Oriented Programming";

Write a *foreach* loop to print each element's name and value.

[2 marks]

(d) Write the PHP variables to obtain the following information.

i) Server name

ii) Client IP Address

[1 mark]

Continued ...

Question 4

(a) Multitier web application architecture is a client–server software architecture pattern in which the user interface (presentation), functional process logic ("business rules"), computer data storage and data access are developed and maintained as independent modules. Briefly describe **THREE (3)** logics in the middle tier of multitier web application architecture.

[3 marks]

(b) Represent the following XML document with a logical view or as a tree.

```
<table>
  <record>
     <id>100102341</id>
     <subject>Web Tech</subject>
     <code>TWT2231</code>
     <lecturer>Sayeed</lecturer>
  </record>
  <record>
  </record>
</table>
```

[3 marks]

(c) A DTD is a Document Type Definition. A DTD defines the structure and the legal elements and attributes of an XML document. Use the given DTD as shown below and answer the questions as follows:

```
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="transform.xsl"?>
<!DOCTYPE document[
  <!ELEMENT document
    (subject*,prerequisite?,assessment,textbooks*)>
  <!ELEMENT prerequisite (subjectID,subjectname)>
  <!ELEMENT textbooks (author,booktitle)>
  <!ELEMENT subject (#PCDATA)>
  <!ELEMENT assessment (#PCDATA)>
  <!ATTLIST assessment assessment_type (exam | assignment) #IMPLIED>
]>
```

(i) What is the root element in this DTD?

(ii) Name a parent that is optional in this DTD?

(iii) Name a parent that can allowed zero instances of element.

(iv) What is the function of the flag "#IMPLIED" in this DTD?

[4 marks]

Continued ...

Question 5

(a) Web service technology has evolved around phases of five technologies. Describe any **FOUR (4)** technologies and give an example of the most common choices for each technology.

[4 marks]

(b) As the internet exploded in the recent years, internet security has become a problem of common concern in all countries. Discuss any **FOUR (4)** web's related security issues and suggest a solution to each of them.

[4 marks]

(c) There were over one million web attacks against people each day. Cybercriminals continue to take advantage of vulnerabilities in legitimate websites to infect users. From this point of view, explain the following threats and attacks of Internet:

(i) DDoS (Distributed Denial of Service attack

(ii) Malicious Software (Malware)

[2 marks]

End of Paper